

REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested. Upon entry of this amendment, claims 21 and 27 are amended. No new matter has been added.

Rejections Under 35 U.S.C. §112, second paragraph

Claims 21 and 27 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants submit that claims 21 and 27 have been amended to overcome this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 21 and 27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Hidaka et al. (JP 10-106441), Kim et al. and Okuyama et al (JP 2001-243886).

Applicants respectfully traverse this rejection and submit that the claims as now pending with are allowable over the cited prior art. Specifically independent claim 21 recites a method of manufacturing a plasma display panel (PDP) comprising a process of forming a metal oxide film comprising introducing oxygen gas into a deposition room and controlling a partial pressure of the oxygen gas within a range from 3×10^{-3} Pa to 3×10^{-2} Pa, so as to restrain an amount of dangling bonds in the metal oxide film, and introducing another gas into the deposition room so as to increase an amount of the dangling bonds in the metal oxide film, the another gas capable of including carbon monoxide, carbon dioxide, or carbon monoxide and carbon dioxide, wherein when the another gas includes carbon monoxide, controlling a partial pressure of the carbon monoxide within a range from 1×10^{-3} Pa to 5×10^{-2} Pa, wherein when the another gas includes carbon dioxide, controlling a partial pressure of the carbon dioxide within a range from 1×10^{-4} Pa to 3×10^{-3} Pa, and wherein the degree of vacuum in the deposition room is controlled within a predetermined range by adjusting an amount of an inert gas introduced into the deposition room.

This method enables stabilization of the physical properties of the MgO film so as to prevent the state of the secondary emission from changing. Additionally, the method keeps the deposition rate constant such that a high quality film is obtained.

The cited prior art fails to disclose or render obvious such a method. In particular, the Examiner recognizes that Shintani fails to disclose introducing another gas including at least one gas selected from the group consisting of carbon monoxide and carbon dioxide. For this element, the Examiner cites Kim, stating that Kim discloses that the secondary emission coefficient changes for an MgO film with exposure to water vapor or carbon dioxide. However, none of the cited prior art discloses a gas that is capable of including carbon monoxide, carbon dioxide, or carbon monoxide and carbon dioxide.

Additionally, the Examiner suggests that Hidaka discloses an oxygen partial pressure and carbon dioxide (as suggested by Kim) partial pressure within the claimed ranges. Applicants respectfully disagree and note that Hidaka discloses an oxygen partial pressure that is kept in 1×10^{-4} torr and steam (i.e., carbon dioxide, as taught by Kim) partial pressure between 1×10^{-4} torr and 5×10^{-4} torr. Neither of these partial pressure ranges fall within the ranges set forth in claim 21. That is, 1×10^{-4} torr is 1.3×10^{-2} Pa and 5×10^{-4} is 6.6×10^{-2} . Thus, Hidaka (or Hidaka, as taught by Kim), at best, teaches maintaining the oxygen partial pressure at 1.3×10^{-2} Pa and exceeding 1.3×10^{-2} Pa to 6.6×10^{-2} , neither range being within or overlapping the claimed ranges. Moreover, there is no disclosure of the claimed range with respect to carbon monoxide. Thus, it is clear that the proposed combination of art does not disclose each of the elements of independent claim 21.

Moreover, there is no reasoning in the prior art to modify any of the cited prior art such that the combination thereof would have rendered independent claim 21 obvious. Therefore, Applicants submit that independent claim 21 is allowable over the cited prior art.

Applicants submit that independent claim 27 is allowable for reasons similar to those set forth above. Namely, the cited prior art fails to disclose or render obvious an apparatus for manufacturing a plasma display panel (PDP) comprising a gas-introducing means for introducing oxygen gas to restrain an amount of dangling bonds in the metal oxide film and another gas to increase an amount of the dangling bonds in the metal oxide film into the deposition room, the another gas capable of including carbon monoxide, carbon dioxide, or carbon monoxide and carbon dioxide, wherein the partial pressure of the oxygen gas is controlled within a range from 3×10^{-3} Pa to 3×10^{-2} Pa, wherein when the another gas includes carbon monoxide, controlling a partial pressure of the carbon monoxide within a range from 1×10^{-3} Pa to 5×10^{-2} Pa, wherein when the another gas includes carbon dioxide, controlling a partial pressure of the carbon dioxide within a range from 1×10^{-4} Pa to 3×10^{-3} Pa; and wherein the degree of vacuum in the

deposition room is controlled within a predetermined range by adjusting an amount of an inert gas introduced into the deposition room, as recited in claim 27.

Double Patenting

Claim 21 is provisionally rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claim 6 of co-pending Application No. 10/532,672 in view of Hidaka and Kim.

Applicants submit that claim 21 is not obvious in view of the above combination of references for similar reasons to those set forth above. Therefore, Applicants respectfully request that this provisional rejection be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, all of the claims now pending in this application are believed to be in condition for allowance. Reconsideration and favorable action are respectfully solicited.

Should the Examiner believe there are any remaining issues that must be resolved before this application can be allowed, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Michihiko TAKASE et al.

/Jeffrey J. Howell/

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Jeffrey J. Howell

Registration No. 46,402

Attorney for Applicants

JJH/ete

Washington, D.C. 20005-1503

Telephone (202) 721-8200

Facsimile (202) 721-8250

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